

**Claims**

1. An isolated CD8-tropic HIV-1 gp120 polypeptide.
2. The isolated CD8-tropic HIV-1 gp120 polypeptide of claim 1 that is the AD3.v6 polypeptide set out in SEQ ID NO: 2.
3. The isolated CD8-tropic HIV-1 gp120 polypeptide of claim 1 that is the AD3.v22 polypeptide set out in SEQ ID NO: 4.
4. An isolated CD8-tropic gp120 polypeptide of claim 1 that is the 92UG046-T8 polypeptide set out in SEQ ID NO: 10.
5. An isolated CD8-tropic gp120 polypeptide of claim 1 that is the 93UG086-T8 polypeptide set out in SEQ ID NO: 12.
6. An isolated CD8-tropic gp120 polypeptide of claim 1 that is the 92US077-T8 polypeptide set out in SEQ ID NO: 14.
7. An isolated CD8-tropic gp120 polypeptide of claim 1 that is the 93US143-T8 polypeptide set out in SEQ ID NO: 16.
8. An isolated CD8-tropic gp120 polypeptide of claim 1 that is the 96USHIPS4-T8 polypeptide set out in SEQ ID NO: 18.
9. An isolated CD8-tropic gp120 polypeptide of claim 1 that is the 96USHIPS9-T8 polypeptide set out in SEQ ID NO: 20.
10. An isolated CD8-tropic gp120 polypeptide of claim 1 that is the 96USSN20-T8 polypeptide set out in SEQ ID NO: 22.

11. An isolated polynucleotide encoding the CD8-tropic HIV-1 gp120 polypeptide of any one of claims 1 to 10.

12. The isolated polynucleotide of claim 11 which is the AD3.v6 polynucleotide set out in SEQ ID NO: 1.

13. The isolated polynucleotide of claim 11 which is the AD3.v22 polynucleotide set out in SEQ ID NO: 3.

14. The isolated polynucleotide of claim 11 which is the 92UG046-T8 polynucleotide set out in SEQ ID NO: 9.

15. The isolated polynucleotide of claim 11 which is the 93UG086-T8 polynucleotide set out in SEQ ID NO: 11 .

16. The isolated polynucleotide of claim 11 which is the 92US077-T8 polynucleotide set out in SEQ ID NO: 13 .

17. The isolated polynucleotide of claim 11 which is the 93US143-T8 polynucleotide set out in SEQ ID NO: 15 .

18. The isolated polynucleotide of claim 11 which is the 96USHIPS4-T8, polynucleotide set out in SEQ ID NO: 17.

19. The isolated polynucleotide of claim 11 which is the 96USHIPS9-T8 polynucleotide set out in SEQ ID NO: 19.

20. The isolated polynucleotide of claim 11 which is the 96USSN20-T8 polynucleotide set out in SEQ ID NO: 21 .

21. A vector comprising the polynucleotide of claim 11
22. A cell comprising the polynucleotide of claim 11.
23. An antisense polynucleotide complementary to the coding strand of the polynucleotide of claim 11.
24. An antibody specific for at least one CD8-tropic HIV-1.
25. An antibody specific fro a CD8-tropic HIV-1.
26. A method for eliciting an immune response to a CD8-tropic HIV-1 in an individual, said method comprising administering to the individual an immunogenic dose of a composition comprising one of more CD8-tropic HIV-1 gp120 polypeptides.
27. A method for eliciting an immune response to a CD8-tropic HIV-1 in an individual, said method comprising administering to the individual an immunogenic dose of a composition comprising cells expressing one or more CD8-tropic HIV-1 gp120 polypeptides.
28. A method for eliciting an immune response to a CD8-tropic HIV-1 in an individual, said method comprising administering to the individual an immunogenic dose of a composition comprising polynucleotides encoding one or more CD8-tropic HIV-1 gp120 polypeptides.
29. An immunogenic composition comprising one or more CD8-tropic HIV-1 polypeptide.
30. An immunogenic composition comprising cells expressing one or more CD8-tropic HIV-1 polypeptides.

31. An immunogenic composition comprising polynucleotides encoding one or more CD8-tropic HIV-1 polypeptides.
32. A method for detecting CD8-tropic HIV-1, said method comprising detecting one or more CD8-tropic HIV-1 gp120 polypeptides.
33. A method for detecting CD8-tropic HIV-1, said method comprising detecting CD8-tropic HIV-1 gp120 polynucleotide.
34. A method for blocking binding of CD8-tropic HIV-1 to CD8-positive cells in an individual, said method comprising administering one or more polypeptides of claim 1 to the individual.
35. A method for blocking binding of CD8-tropic HIV-1 to CD8-positive cells in an individual, said method comprising administering antibody of claim 24 to the individual.
36. A method for blocking binding of CD8-tropic HIV-1 to CD8-positive cells in an individual, said method comprising administering antibody of claim 25 to the individual.
37. A method for blocking binding of CD8-tropic HIV-1 to CD8-positive cells in an individual, said method comprising administering a small molecule to the individual.
38. A pharmaceutical composition comprising antibody of claim 24 or 25.
39. A pharmaceutical composition comprising polypeptide of claim 1.
40. An isolated CD8-tropic gp120 polypeptide wherein the amino acid at position 270 is isoleucine.

41. An isolated CD8-tropic gp120 polypeptide wherein the amino acid at position 270 is selected from the group consisting of isoleucine, valine, methionine, alanine, phenylalanine and norleucine.

42. An isolated CD8-tropic gp120 polypeptide wherein the amino acid at position 177 is aspartic acid or glutamic acid.

423 An isolated CD8-tropic gp120 polypeptide wherein the amino acid at position 185 is aspartic acid or glutamic acid.

44. An isolated CD8-tropic gp120 polypeptide wherein the amino acid at position 209 is serine.

45. An isolated CD8-tropic gp120 polypeptide wherein the amino acid at position 209 is selected from the group consisting of serine, threonine, alanine and cysteine.

46. An isolated CD8-tropic gp120 polypeptide wherein the amino acid at position 352 is glutamic acid.

47. An isolated CD8-tropic gp120 polypeptide wherein the amino acid at position 352 is selected from the group consisting of glutamine and asparagine.

48. An isolated CD8-tropic gp120 polypeptide wherein the amino acid at position 442 is glutamic acid.

49. An isolated CD8-tropic gp120 polypeptide wherein the amino acid at position 442 is selected from the group consisting of glutamic acid and aspartic acid.

50. An isolated CD8-tropic gp41 polypeptide wherein the amino acid at position 693 is isoleucine.

51. An isolated CD8-tropic gp41 polypeptide wherein the amino acid at position 693 is selected from the group consisting of isoleucine, valine, methionine, alanine, phenylalanine and norleucine.

52. An isolated CD8-tropic gp41 polypeptide wherein the amino acid at position 724 is glutamic acid.

52. An isolated CD8-tropic gp41 polypeptide wherein the amino acid at position 724 is selected from the group consisting of glutamic acid and aspartic acid.

53. An isolated CD8-tropic gp41 polypeptide wherein the amino acid at position 779 is alanine.

54. An isolated CD8-tropic gp41 polypeptide wherein the amino acid at position 779 is selected from the group consisting of alanine, valine, leucine, and isoleucine.

55 An isolated CD8-tropic gp41 polypeptide wherein the amino acids sequence HSSLKGL (SEQ ID NO: 27) is within the transmembrane domain.